

Claims;

1. An optical compensation film comprising a support and an optically anisotropic layer, wherein the optically anisotropic layer is a layer on which orientation of the liquid crystalline compound is fixed and the support is an optically biaxial cellulose ester film.

2. The optical compensation film of claim 1, wherein retardation value R_0 in the plane direction of the support is from 25 to 95 nm, radiation ratio R_t/R_0 of the retardation value R_t in the thickness direction to the retardation value R_0 is from 0.8 to 4.0, and $n_x > n_y > n_z$ is held,

$$R_0 = (n_x - n_y) \times d$$

$$R_t = [(n_x + n_y)/2 - n_z] \times d$$

wherein n_x represents a refractive index of the support in x direction which gives maximum refractive index in a plane of the support and n_y represents a refractive index of the support in the y direction perpendicular to x in the plane of the support, n_z represents a refractive index of the support in the z direction perpendicular to the plane of the support, and d represents the thickness (in nm) of the support.

3. The optical compensation film of claim 2, wherein radiation ratio R_t/R_o is from 1.4 to 4.0.
4. The optical compensation film of claim 2, wherein radiation ratio R_t/R_o is from 0.8 to 1.4.
5. The optical compensation film of claim 4, wherein the refractive index of the support in a direction of film conveyance is maximum in the plane of the support.
6. The optical compensation film of claim 3, wherein radiation ratio R_t/R_o is from 2.0 to 3.5.
7. The optical compensation film of claim 6, wherein the refractive index of the support in a direction perpendicular to a direction of film conveyance is maximum in the plane of the support.
8. The optical compensation film of claim 1, which comprises an alignment layer on which the liquid crystalline compound of the optically anisotropic layer is oriented.

9. The optical compensation film of claim 8, wherein the alignment layer is prepared by rubbing the surface of the support.

10. The optical compensation film of claim 8, wherein the alignment layer is a layer oriented by light.

11. The optical compensation film of claim 1, wherein the optical anisotropic layer consists of a single layer.

12. The optical compensation film of claim 1, wherein the liquid crystalline compound of the optical anisotropic layer is rod-shaped, and an average angle between the direction resulting in the maximum refractive index of said rod-shaped liquid crystalline compound and the surface of said cellulose ester film exceeds 0 degree but is less than 80 degrees.

13. The optical compensation film of claim 12, wherein an angle between direction resulting in maximum refractive index of the rod-shaped liquid crystalline compound and the surface of the support varies from 0 to 90 degrees continuously or stepwise in a direction of thickness of the support.

14. The optical compensation film of claim 13, wherein an angle between direction resulting in maximum refractive index of the rod-shaped liquid crystalline compound located farthest to the support and the surface of the support is larger than an angle between direction resulting in maximum refractive index of the rod-shaped liquid crystalline compound located closest to the support and the surface of the support.

15. The optical compensation film of claim 1, wherein the liquid crystalline compound of the optical anisotropic layer is rod-shaped, direction projecting the direction resulting in the maximum refractive index of the rod-shaped liquid crystalline compound on a surface of the support is perpendicular to the direction resulting in the maximum refractive index of the support.

16. The optical compensation film of claim 1, wherein the rod-shaped liquid crystalline compound in the optical anisotropic layer exhibits optically positive uniaxial properties.

17. The optical compensation film of claim 16, wherein plane retardation value of the optically anisotropic layer is from 10 to 300 nm and retardation value of the optically anisotropic layer in the thickness direction is from 15 to 300 nm.

18. The optical compensation film of claim 1, which comprises a dissolving-out blocking layer between the support and the optically anisotropic layer.

19. The optical compensation film of claim 1, wherein the optically biaxial cellulose ester film comprises cellulose ester resin having degree of acetyl group substitution of from 2.50 to 2.86.

20. The optical compensation film of claim 1, wherein the optically biaxial cellulose ester film comprises cellulose ester resin satisfying

$$2.0 \leq (A + B) \leq 3.0, \text{ and}$$

$$A < 2.4$$

wherein cellulose ester resin "A" is a degree of acetyl group substitution of the cellulose ester resin, and "B" is a degree of propionyl group substitution of the cellulose ester resin.

21. A polarizing plate comprising a polarizing element and the optical compensation film of claim 1.

22. A liquid crystal display comprising a first polarizing plate, a liquid crystal cell and a second polarizing plate provided at a side closer to viewer side than the side of the first polarizer and the liquid crystal cell, wherein the optical compensation film of claim 1 is provided between the first polarizing plate and the liquid crystal cell or between the second polarizing plate and the liquid crystal cell.

23. A liquid crystal display of claim 22, wherein only one optical compensation film is provided between the first polarizing plate and the liquid crystal cell or between the second polarizing plate and the liquid crystal cell.

24. The liquid crystal display of claim 22, wherein the optical compensation film is placed so that the support of the optical compensation film is faced to the liquid crystal cell.

25. The liquid crystal display of claim 22, wherein rubbing direction of the liquid crystal cell closer to the optical compensation film is crossing orthogonally or almost orthogonally to direction giving maximum index of the refraction of the support.

26. The liquid crystal display of claim 25, wherein rubbing direction of the liquid crystal cell closer to the optical compensation film is parallel or almost parallel as the rubbing direction of the optical compensation film.

27. The liquid crystal display of claim 22, wherein the optical anisotropic layer of the optical compensating film is composed of a single later.

28. The liquid crystal display of claim 22, wherein an angle between direction resulting in maximum refractive index of the liquid crystalline compound and the surface of the support varies from 0 to 90 degrees continuously or stepwise in a direction of thickness of the support, and an angle between direction resulting in maximum refractive index of the rod-shaped liquid crystalline compound located farthest to the support and the surface of the support is larger than an angle between direction resulting in maximum refractive

index of the rod-shaped liquid crystalline compound located closest to the support and the surface of the support.

29. The optical compensation film of claim 22, wherein a projection direction within the surface of the support in direction resulting in maximum refractive index of a liquid crystalline compound is orthogonal or almost orthogonal to the direction resulting in the maximum refractive index of the support.